City of Cambridge
Transportation Demand Management Program Report
Results from 2024 transportation monitoring

Summary

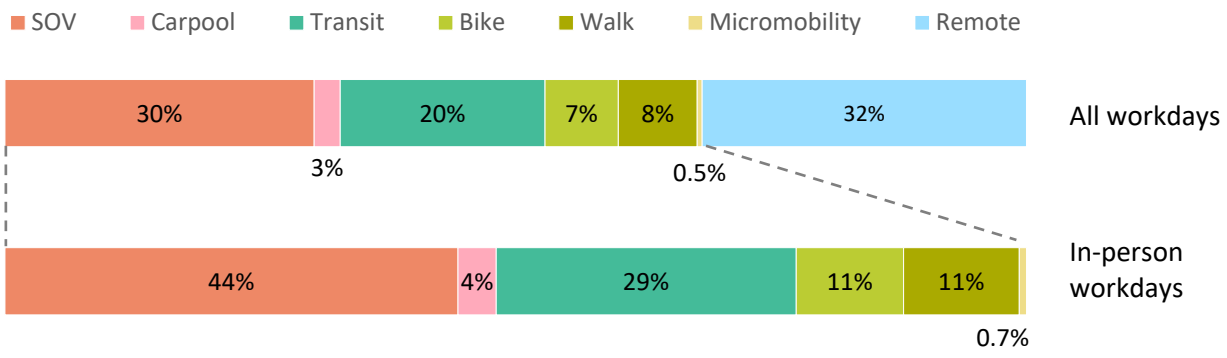
This report describes the results of the Cambridge Transportation Demand Management (TDM) Program's annual transportation monitoring. It includes projects regulated under the Parking and Transportation Demand Management (PTDM) Ordinance and Planning Board Special Permits.

We received reports from 82 properties in 2024. The reports included information on commute programs required at the properties and a survey about how people traveled to the sites.

All projects receive letters about their compliance status in response to their reports. The letters offer detailed feedback and technical assistance to help projects reduce their single-occupancy vehicle (SOV) rates.

The mode share survey allows City staff to examine patterns in employee trips to work at properties that participate in the TDM Program. In 2024, working remotely was the most common way of participating in work (32%), followed by driving alone (30%), taking public transportation (20%), walking (8%), biking (7%), carpooling (3%), and micromobility like e-scooters (less than 1%). There was a small decrease in driving alone from 32% in 2023.

Figure 1. Employee commute mode share at TDM Program properties, 2024



Data source: 2024 Cambridge TDM Program Employee Survey

This report also covers the most popular reasons for using each mode, what employees say would help them drive less, weekly remote work patterns, and resident and patron transportation choices. Future reports will include analysis of other survey questions and required commute programs.

Contents

TDM Program Overview

The City of Cambridge requires properties to participate in the TDM Program in two ways: through the PTDM Ordinance and through conditions on Planning Board Special Permits. The City requires participating properties to submit a report about their sustainable transportation programs and the transportation patterns of people visiting their sites every year. If a property is required to do monitoring and reporting, they begin reporting approximately one year after the new or renovated facility is occupied.

Parking and Transportation Demand Management Ordinance

The PTDM Ordinance, adopted in 1998, aims to reduce traffic congestion and greenhouse gas emissions, and improve traffic safety. It does this by promoting walking, bicycling, public transit, and other sustainable modes.

A property triggers the Ordinance if it meets all of these criteria:

1. It is non-residential,
2. It creates any new parking or changes who can use existing parking, and
3. The total number of parking spaces at the site is 5-19 (Small Projects) or 20 or more (Large Projects).

The Ordinance requires these projects to create a PTDM plan, which must be approved by the City. Large Project PTDM plans must include a commitment to reduce the percentage of people driving alone to the project and implement a range of transportation demand management measures. Large Projects must also monitor travel to the site and report on the status of the SOV commitment and TDM measures. Small Projects must implement at least three TDM measures, but there is no SOV commitment or annual monitoring.

A wide variety of measures have been implemented to meet PTDM SOV commitments. All PTDM plans include measures to promote walk, bike, transit, and carpool travel. However, the Ordinance allows property owners and employers to choose measures that are most appropriate for their site.

High-impact TDM measures include:

- Offering MBTA pass subsidies,
- Providing Bluebikes stations and offering annual memberships,
- Offering incentives for walking and biking,
- Charging people directly for parking, and
- Providing shuttle service to transit stations.

PTDM plans can also include supportive TDM measures that establish a culture of using sustainable transportation. Supportive measures include providing showers and changing facilities for people who walk or bike to work, reserved parking for carpools, and occasional parking for people who don't usually drive.

The PTDM Ordinance was amended in December 2024 to make it easier for property owners to share existing parking with neighbors along certain streets. Data collected for this report predates that change.

Planning Board Special Permits

The City also makes TDM agreements with property owners through the Planning Board Special Permit process. When the City expects that a project will have large transportation impacts, the Planning Board may include a TDM plan as a condition of the Special Permit. Some Special Permit TDM properties have SOV commitments like Large PTDM Projects, and some do not.

Important Terms and Survey Information

Transportation mode is how a person gets around. The modes discussed in this report are:

- **Drive alone / Single-occupancy vehicle (SOV)**: Using a private vehicle alone, including motorcycles, taxis, and ride-hail services like Uber and Lyft. Ride-hail was added to the TDM Program survey in 2017.
- **Carpool**: Using a private vehicle with one or more other people, including vanpools and shared ride-hail services like UberX Share or Lyft Shared. Shared ride-hail was added to the TDM Program survey in 2017.
- **Public Transit:** Using a bus, subway, train, trolly, ferry, paratransit service, or public or private shuttle.
- **Walk:** Walking or using a wheelchair.
- **Bike:** Riding a bike, including personal bikes and Bluebikes public bikeshare.
- **Other:** Using another method. "Other" is an option in Census Bureau surveys and appeared in TDM Program surveys before 2020.
- **Micromobility:** Using a scooter, skateboard, skates, or other micromobility device. These devices are sometimes but not always electric. Micromobility devices are not listed as options in Census Bureau surveys. In TDM Program surveys, micromobility devices were included under "Other" before 2020, when they became their own survey category.

A **sustainable mode** or **sustainable transportation option** is any mode other than driving alone.

All surveys used in this report ask what mode a person used for the longest part of their trip to work, school, shopping, or other activities. Of course, most trips include multiple modes. For example, someone who walked to their parked car, drove, parked, and then walked again to their destination would choose "drive alone" on a survey.

SOV commitments are commitments made by property owners to keep the percentage of people driving alone to the project below a certain level. SOV commitments are linked to a particular type of site user, like employees, students, residents, or patrons. Some properties have a single SOV commitment, and some have multiple commitments, depending on who is expected to visit the site. If a property has multiple commitments, they conduct one survey for each commitment type.

To interpret information about mode frequency in this report, it is important to know the TDM Program survey questions people are responding to:

- **Employees** and **commuting graduate students** answer how they got to or participated in work or school each day of the survey week.

- **Residents** answer how they got to or participated in work or school each day of the survey week and also how they *usually* participate in shopping, social activities, and medical appointments.
- **Patrons, visitors, patients**, and **guests** answer how they got to the location that day.

The **TDM Program** includes properties whose participation is required by the PTDM Ordinance or Planning Board Special Permit conditions.

Some sections of this report compare employees at TDM Program properties to the **Cambridge workforce**, which is all people who work in Cambridge, no matter where they live. Commute information for the Cambridge workforce comes from the U.S. Census Bureau. Other reports from Cambridge's Community Development Department sometimes include information about the **Cambridge resident workforce**, which is all Cambridge residents who work, no matter where they work. This report does not include information about the Cambridge resident workforce. It does include information about Cambridge residents who live at a property in the TDM Program, whether or not they work.

2024 Monitoring Results

Reports Received and Commitments Met

In 2024, we expected 47 Large PTDM Project reports and 35 Special Permit reports. We received all 82 expected reports. There were 13 Small Projects that did not require monitoring.

The 2024 reports covered about 37,000 parking spaces, 23 million square feet of commercial development, and 18 million square feet of institutional (education and hospital) development. More than 57,000 employees (38% of Cambridge workers[1]), 9,000 students, and 10,000 residents work, study, and live at the properties that reported in 2024.

Large Project PTDM properties and some Special Permit TDM properties must include a travel-habit and mode share survey in their reports. The surveys help City staff:

- Check whether a project has met its SOV commitments (if applicable),
- Track transportation patterns and emerging trends, and
- Improve predictions about the travel patterns at future development sites.

Table 1 shows SOV commitment performance at the 82 reporting projects. Thirty-three projects did not have any SOV commitments. There were 48 projects with commitments to a maximum SOV mode share ranging from 6% to 66%. One project with an SOV commitment was not required to conduct a survey in 2024. Four projects did not achieve a high enough survey response rate to reliably determine whether they met their commitments. Thirty projects met all their SOV commitments, five met at least some of their commitments, and nine did not meet any of their commitments.

Of the nine projects that did not meet any of their SOV commitments, five did not fully implement their required TDM measures and four offered free or subsidized parking. Three saw a reduction in their transit mode share of at least 9 percentage points from 2023 to 2024. Five of the nine projects had also failed to meet any of their SOV commitments in 2023. Of these, three reduced their SOV rate in 2024.

Table 1. SOV commitment performance at TDM Program properties, 2024

SOV commitments met	Number of projects	As a % of projects that submitted reports	As a % of projects w/2024 commitments
Met all commitments	30	37%	63%
Met at least one commitment	5	6%	10%
Did not meet any commitments	9	11%	19%
Unknown (low response rate)	4	5%	8%
Survey not required in 2024	1	1%	-
No commitment required	33	40%	-
Total	**82**	**100%**	**100%**

[1] The Massachusetts Department of Unemployment Assistance reported an average of 151,136 jobs in Cambridge during the second quarter of 2024. This figure does not include self-employed persons or sole proprietors.

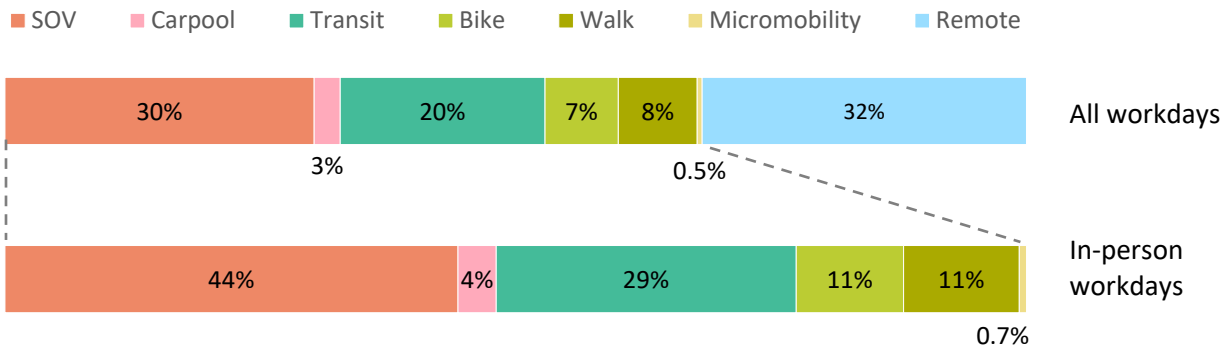
All projects receive letters about their compliance status in response to their reports. The letters offer detailed feedback and technical assistance to non-compliant projects. In cases when a property has implemented all its required TDM measures and still does not achieve desired SOV levels, staff engages with owners to develop additional reasonable TDM measures. So far, the City has not needed to exercise any enforcement provisions in the PTDM or Zoning Ordinances.

Employee Survey Results

The TDM Program Employee Survey received 24,118 responses from workers at 345 offices, labs, restaurants, and stores across the program properties.

Figure 1 shows the commute mode share for these employees. Working remotely was the most common way of participating in work (32%), closely followed by driving alone (SOV, 30%). Workers used transit to get to work 20% of the time, walked 8%, and biked for 7% of workdays. Carpool (3%) and micromobility (0.5%) were the least common modes.

Figure 1. Employee commute mode share at TDM Program properties, 2024



Data source: 2024 Cambridge TDM Program Employee Survey

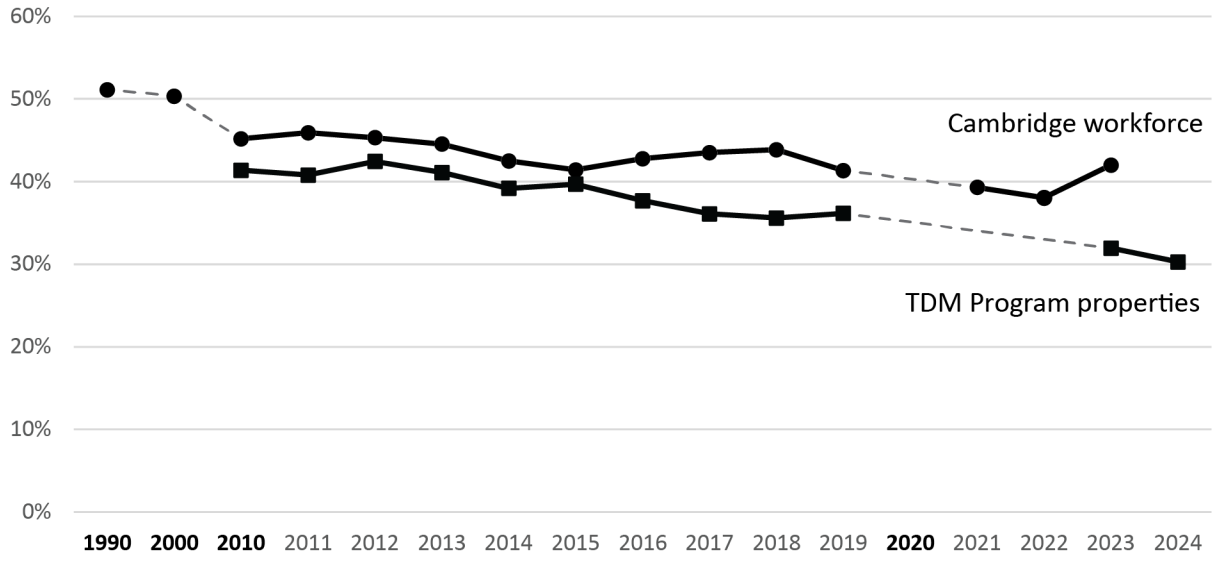
The lower bar in Figure 1 shows how employees commuted to work when they worked in person at their workplaces. Slightly less than half of commutes to in-person work were made by car (44% driving alone and 4% in a carpool). Of workers who took a car to work (either alone or carpooling), about 3% used a ride-hail service.

Employee Survey: Historical Trends

Figure 2 shows the SOV rate for all Cambridge workers starting in 1990 and for properties in the TDM Program starting in 2010. The properties in the TDM Program continued their long-term trend of decreasing SOV rates in 2024. The SOV rate for the Cambridge workforce has decreased over the past 40 years, but there was a sharp rise from 2022 to 2023, the most recent year of data available for the Cambridge Workforce. Figure 2 does not show the TDM Program SOV rate for 2022 because only about half of the properties in the program were required to submit a report. However, based on the properties who did submit a report, it's likely that TDM Program properties also saw an increase in SOV rate from 30% in 2022 to 32% in 2023.

Between 2023 and 2024, the SOV rate at TDM Program properties decreased from 32% to 30%. This is equivalent to reducing the number of vehicle trips by about 5,000 per week, or 270,000 total in 2024.

Figure 2. Long-term trend: SOV mode share for Cambridge workforce and TDM Program properties, 1990-2024



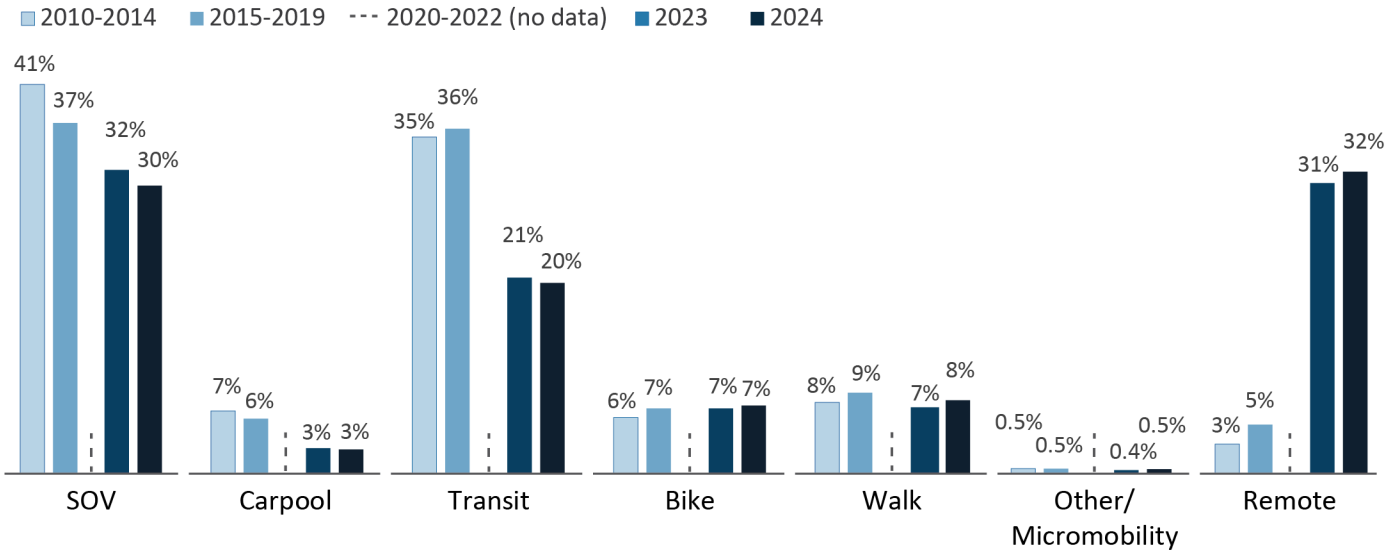
Data sources: Cambridge workforce: 1990 and 2000 Decennial Census, 2010-2023 ACS 1-year estimates, no data available for 2020. 2024 ACS data is not yet available. TDM Program: Cambridge TDM Program Employee Surveys, 2010-2024, no data available 2020-2022. Grey dotted lines show where more than one year separates the data points.

The Covid-19 pandemic caused a substantial disruption in how people get around. Figure 3 compares all commute modes for TDM Program properties in 2023 and 2024 to recent, pre-pandemic commute modes (2010 to 2019). **With the 2024 TDM Program data, we are starting to see people's transportation choices stabilize.** 2024 TDM Program data shows a **slight decrease in SOV and transit mode shares** and a **slight increase in remote work compared to 2023**. We will have to wait for future years' survey results to see whether the slight reduction in driving alone this year is part of a continued trend.

Figure 4 shows the mode share for all people who work in Cambridge for 2010-2019 and 2021-2023, the most recent year of data available. Data for this chart comes from the U.S. Census Bureau's American Community Survey (ACS). Comparisons between the TDM Program results and the ACS results should be made cautiously because the surveys ask slightly different questions about travel to work. The City's transportation monitoring survey asks respondents how they traveled *each day of the week*. The ACS asks how respondents *typically* traveled to work during the survey week.

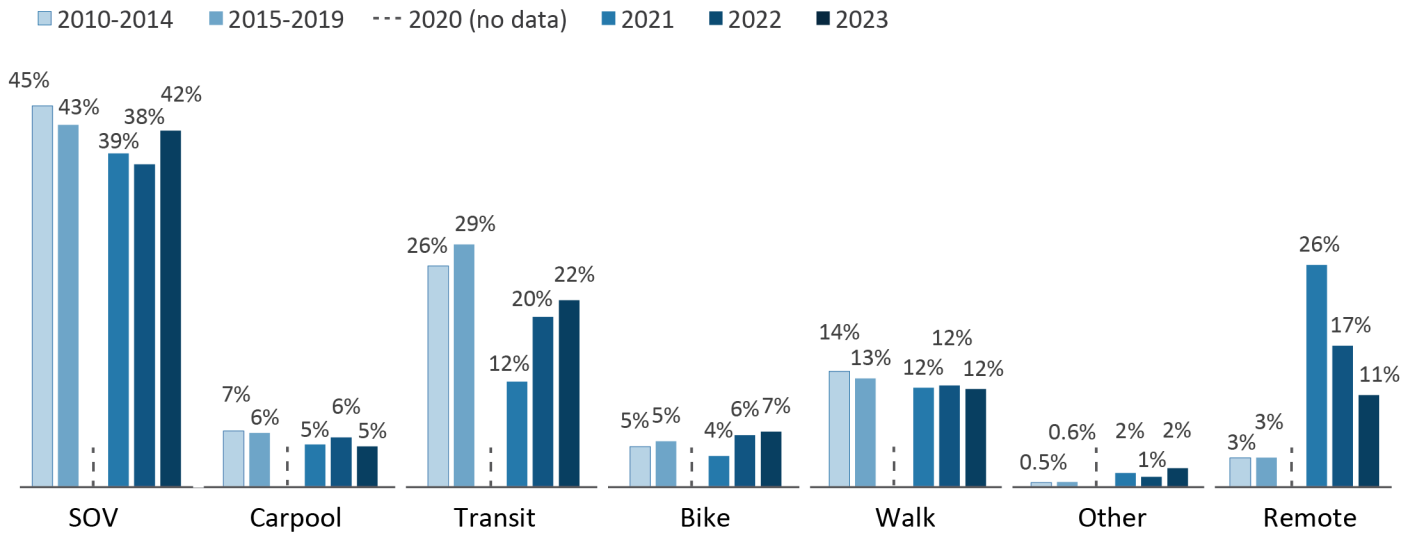
In last year's report, we compared 2023 TDM Program data to 2022 ACS data. This is because 2022 TDM Program data only represented about half of the properties in our program and 2023 ACS data was not yet available. In this and future reports, we will compare ACS and TDM Program data for the same year (the previous year of TDM Program data).

Figure 3. Recent trends: Employee commute modes at TDM Program properties, 2010-2024



Data source: 2010-2024 Cambridge TDM Program Employee Surveys. Surveys were not required from 2020 to spring 2022, and fall 2022 data is excluded from this chart, since it represents only half the properties in the TDM Program.

Figure 4. Recent trends: Commute modes for people who work in Cambridge, 2010-2023



Data source: American Community Survey 5-Year Estimates (2010-2014 and 2015-2019) and 1-Year Estimates (2021-2023), people over age 16 whose workplace is in Cambridge.

One notable difference between TDM Program and ACS data for 2023 is the share of remote workers, which was much higher (31%) at reporting properties than Cambridge overall (11%). This might reflect a real difference between reporting properties and all Cambridge workers. However, the difference might be due to differences in the survey questions. Someone who worked remotely only two days during a

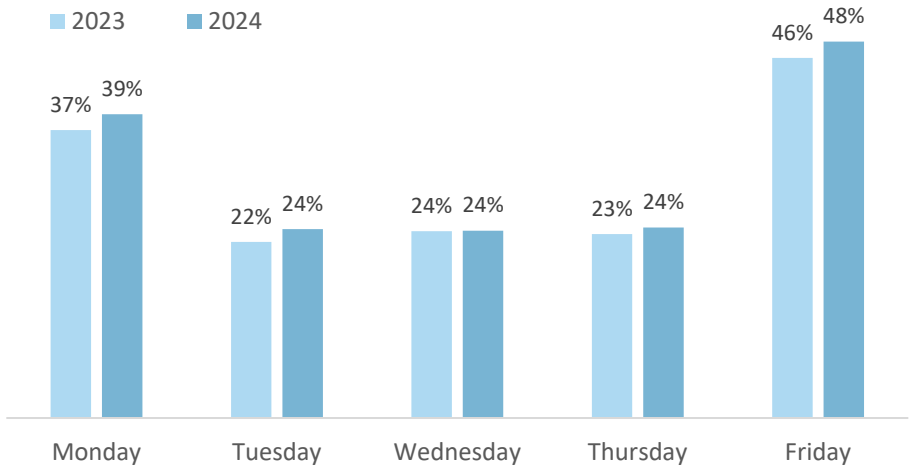
five-day week would likely not choose “remote” on the ACS survey, but the TDM Program survey would capture those trips.

Like the TDM Program results, the ACS shows a disruption in transit commutes and remote work between 2019 and 2021. From 2021 to 2023, both transit and remote work shares trended toward their pre-pandemic levels. SOV mode share did not increase from 2021 to 2022, but returned almost to pre-pandemic levels in 2023.

Employee Survey: Remote Work

Because the TDM Program Employee Survey captures daily variation, we can also examine remote work patterns over the course of the week. Figure 5 shows how many employees reported working remotely each day of the week in 2023 and 2024. The pattern of higher remote work participation on Mondays and Fridays continued in 2024, with about **twice as many remote work days on Fridays as on any mid-week day.** The slight overall increase in remote work this year is fairly evenly distributed across weekdays.

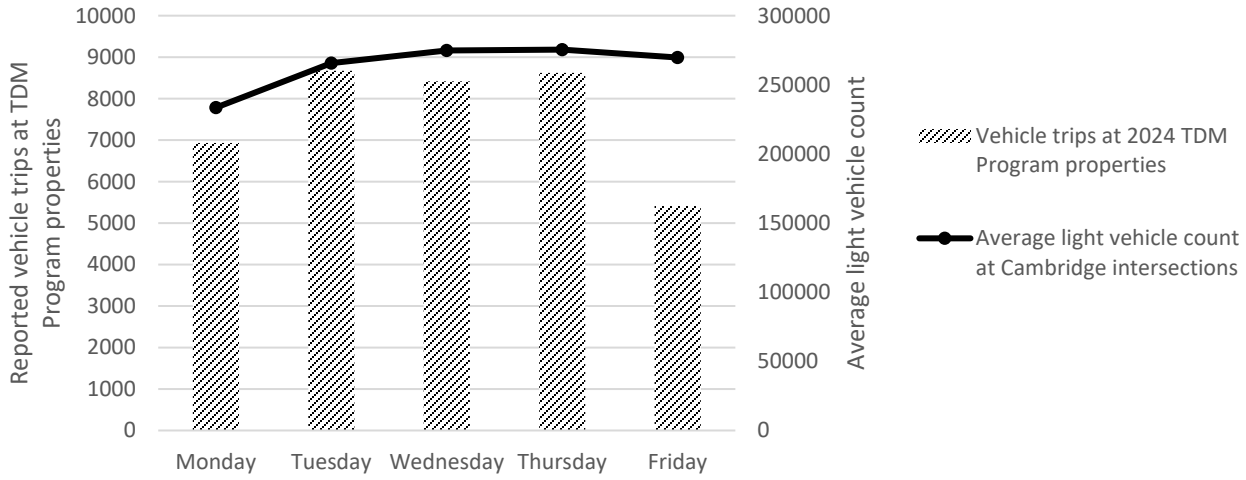
Figure 5. Share of employees working remotely at TDM Program properties by day of the week, 2023-4



Data source: 2023-2024 Cambridge TDM Program Employee Surveys

Figure 6 compares vehicle counts at Cambridge intersections to reported commute trips by day of the week. Miovision cameras count vehicles at 16 intersections across Cambridge. Miovision Traffic Data is available on Cambridge’s Open Data Portal. The line in the figure shows the average traffic counts by day during the two TDM Program survey periods (April-May and September-October 2024). On weekdays, average vehicle counts at intersections were lowest on Mondays and increased through the week, with a small decrease on Fridays. According to the 2024 TDM Program survey results, SOV and carpool trips were lower on Mondays and much lower on Fridays than mid-week. **Together, these weekly patterns suggest that Friday is the weekday with the largest share of non-work trips using a vehicle.**

Figure 6. Comparison of intersection traffic and reported vehicle commute trips by day of the week, April-May and Sept-Oct 2024



Data sources: 2024 Cambridge TDM Program Employee Survey and Miovision traffic cameras (4/1/24 to 5/31/24 and 9/2/24 to 11/1/24). "Vehicle trips" includes SOV and carpool trips.

Employee Survey: What Affects Workers' Transportation Choices

The employee survey asks several questions about why people choose to get to work the way they do. For each mode, people choose the reasons they take that mode to work or school. The top five most popular reasons for each mode are shown in Table 3.

Key takeaways include:

- "Most convenient way to get around" appears in the top reasons that people gave for all mode choices.
- Financial considerations ("Cheapest way to get around," "I have free/affordable parking," "Parking is too expensive") appear in the top reasons for all modes except carpooling and biking.
- "Better for the environment" appears in the top reasons for carpooling, taking transit, biking, and walking.
- Like last year, "Bus or train is unreliable" appears in the top five reasons for driving alone.

Carpooling, biking, and walking's most popular reasons are connected to positive aspects of those modes ("To help someone going my way," "Fun/pleasant way to get around," "For exercise"), while most reasons for taking transit seem to be more about reasons for not driving ("Too much traffic," "Driving is too stressful," "Parking is too expensive"). The most popular reasons for taking each mode remained similar to last year, though the order of the reasons changed in some cases. "No car available" newly appears in the top five reasons for carpooling in 2024, and "Better for the environment" newly appears in the top five reasons for taking transit.

Table 3. Top 5 reasons for taking different modes, 2024

Why do you…	Drive alone?	Carpool?	Use transit?	Bike?	Walk?
1	Most convenient way to get around	To help someone going my way	Too much traffic	For exercise	For exercise
2	Fastest way to get around	Most convenient way to get around	Driving is too stressful	Fun/pleasant way to get around	Fun/pleasant way to get around
3	For errands before/ after work	I do not drive	Most convenient way to get around	Fastest way to get around	Most convenient way to get around
4	Bus or train is unreliable	Better for the environment	Parking is too expensive	Better for the environment	Better for the environment
5	I have free/ affordable parking	No car available*	Cheapest way to get around (tie) Better for the environment*	Most convenient way to get around	Cheapest way to get around

*Data source: 2024 Cambridge TDM Program Employee Survey. * indicates that this answer is newly in the top 5 reasons for taking this mode this year.*

The survey also asks what would help people drive less. Respondents can choose factors from a list of 22 options that include incentives, changes to streets, expanded transit service, changes to life circumstances, and supportive programs. Table 4 shows factors chosen by at least 10% of respondents.

Table 4. What would help you drive less? (Factors chosen by at least 10% of respondents)

What would help you drive less?	Chosen by …
More reliable buses and trains	41%
More frequent buses and trains	38%
Expanded bus/subway/commuter rail routes	37%
Living closer to work	27%
Extra pay not to drive	24%
Permission to work at home	22%
Workplace shuttle available/improved	18%
Safer bike routes	14%
Help paying for bus/train fare	10%
No longer do daycare/school pick-up/drop-off*	10%

*Data source: 2024 Cambridge TDM Program Employee Survey. * indicates that this answer was newly chosen by at least 10% of respondents this year.*

The ranked order of these factors is the same in 2024 as in 2023. There was very little change in the percentage of people choosing each option (a change of less than two percentage points for all but "Help paying for bus/train fare," which decreased from 14% to 10%). **The top three factors all point to improving transit service as a strong strategy for reducing SOV trips.**

Residential Survey Results

The 22 residential properties who surveyed residents in 2024 received about 3,800 total survey responses. These properties are mostly large multifamily buildings located near Lechmere and Kendall squares, and in Alewife. Due to their concentration in these areas, the results in this section should not be considered representative of the travel choices made by Cambridge residents overall.

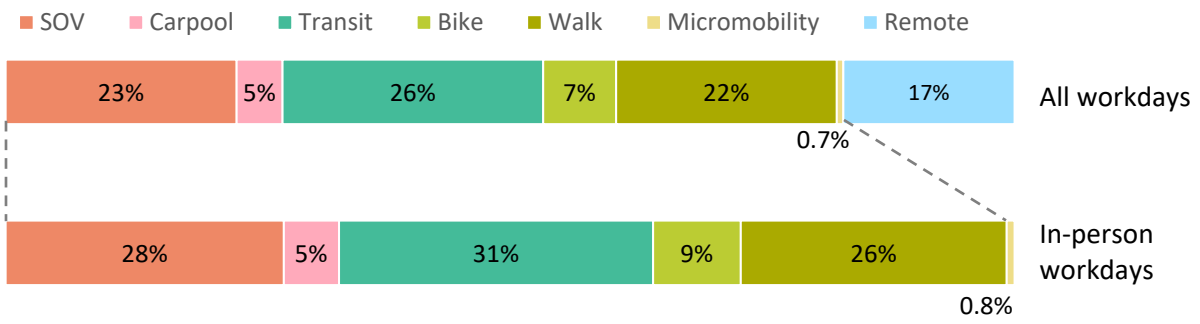
Resident survey: Mode share

The resident survey includes mode questions for four different trip purposes: work or school (commute), shopping, social, and medical trips. The work or school question for residents is identical to the commute question in the employee survey—the survey asks how the person participated in work or school each day of the survey week.

Figure 7 shows the resident mode share for work or school trips in 2024. Residents reported attending work or school remotely at lower rates (17%) than respondents to the employee survey (31%). The walk mode share for work or school trips was much higher for residents (22%) than respondents to the employee survey (7%). Residents used transit (26% vs 20%) and carpooled (5% vs 3%) at slightly higher rates than employees and drove alone at much lower rates (23% vs 32%). Of residents who took a car to work or school (either alone or carpooling), about 10% used a ride-hail service.

The 2024 resident mode share for work and school trips is similar to 2023. There was a slight decrease in remote work (down from 19% in 2023) and a slight increase in carpooling (up from 3% in 2023).

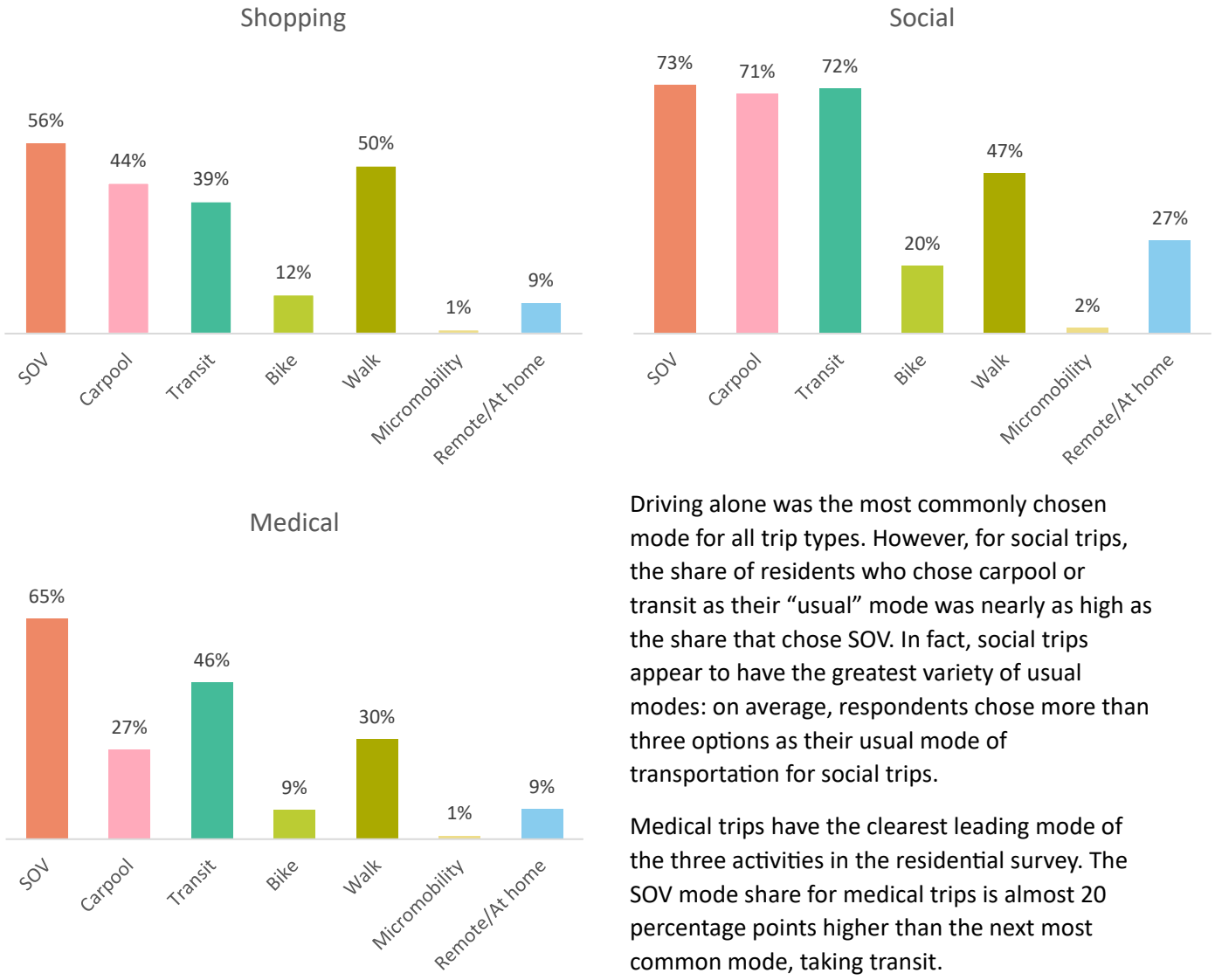
Figure 7. Resident mode share for work/school trips 2024



Data source: 2024 Cambridge TDM Program Resident Survey

For shopping, social, and medical activities, the survey asks how the person *usually* participates in those activities, and residents can choose multiple modes per question.[2]

Figure 7. Residents' usual mode choices for shopping, social, and medical activities, 2024



Data source: 2024 Cambridge TDM Program Resident Survey

Driving alone was the most commonly chosen mode for all trip types. However, for social trips, the share of residents who chose carpool or transit as their "usual" mode was nearly as high as the share that chose SOV. In fact, social trips appear to have the greatest variety of usual modes: on average, respondents chose more than three options as their usual mode of transportation for social trips.

Medical trips have the clearest leading mode of the three activities in the residential survey. The SOV mode share for medical trips is almost 20 percentage points higher than the next most common mode, taking transit.

[2] To make the resident mode questions more consistent across trip types and to improve comparability with other surveys, we have changed this question. Beginning in 2025, residents will choose the single mode they use most often for shopping, social, and medical trips.

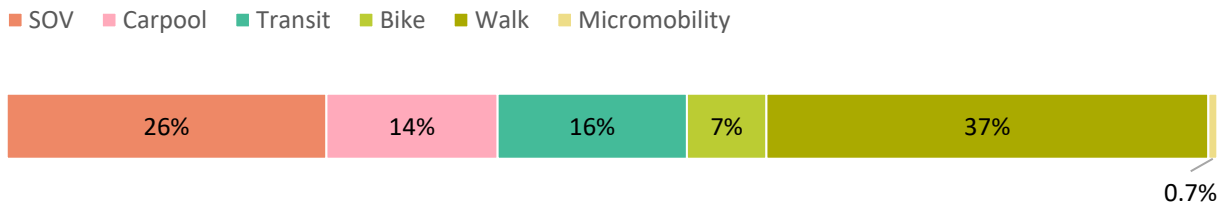
Resident survey: Car ownership

The resident survey also asks about car ownership. Of the people who responded to this question, 46% said that they didn't own a car, 51% said they owned one car, and 4% said they owned more than one car. 9% of respondents said that they owned at least one electric car.

Patron Survey Results

About 5,200 patrons of retail and restaurant locations at 16 reporting properties responded to the patron survey in 2024. Walking was the most common patron mode choice, followed by driving alone, taking transit, carpooling, and biking. Of patrons who took a car to these locations (either alone or carpooling), about 12% used a ride-hail service.

Figure 8. Patron mode share, 2024



Data source: 2024 Cambridge TDM Program Patron Survey

Of the 10 properties who submitted surveys that met our response rate requirements in both 2023 and 2024, six had the same or lower SOV rate in 2024 and four had a higher rate.

Future Reports

Future reports will include analysis of additional questions in the TDM Program Surveys and evaluations of required TDM measures.

For more information or questions about Cambridge's TDM Program, contact the Cambridge PTDM Planner, Ryan McKinnon, at rmckinnon@cambridgema.gov or 617-349-7240.